



//ADA STRA

Adastra Energy Offers

**Enabling transformative energy
industry solutions through Adastra's
Three Horizon approach.**

Hector Osuna / Kevin Harmer





About Adastra



Adastra delivers industry leading **Solutions and Services** across the **Data & Digital** spectrum

DATA

Cloud
Data Engineering
CRM & ERP
Architecture
Managed Services

GOVERNANCE

Data Governance
Data Quality
Master Data Mgmt
Reference Data Mgmt
Meta Data Mgmt
Data Lineage

ANALYTICS & AI

Machine Learning
Statistical Analysis
Text Mining
Visual Analytics
RPA & IPA

DIGITAL & DESIGN

Mobile Apps & Web
Development
UX/UI
Personalized Videos
Emerging
Technologies



Adastra Global Footprint

2000+

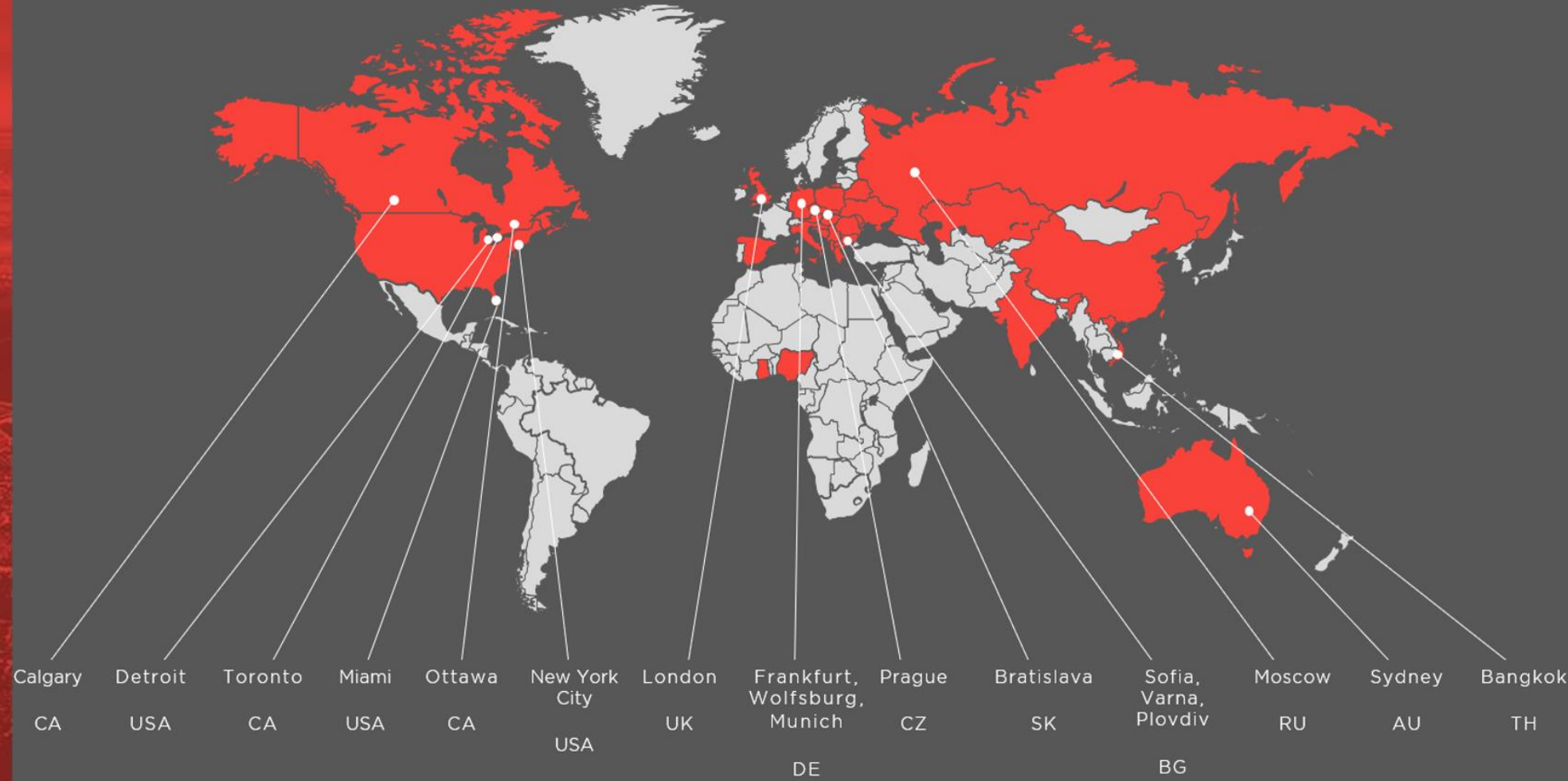
2000+ professionals

1000+

Projects in 46 countries

1

Focus





Adastra Microsoft Partnership

Microsoft
Partner



Gold Data Analytics
Gold Data Platform
Gold Cloud Platform
Gold Datacenter
Gold Application Integration

Adastra: Go-To Partner for Data & AI

Microsoft IMPACT Award Recipient:

- 2021 Analytics Impact Award
- 2021 AI Impact Award
- 2021 Data Platform Modernization Award
- 2020 / 2019 Commercial Partner of the Year
- 2019 Manufacturing Innovation Impact Award

Azure Migration Partner

Advanced Specialization for Analytics

Advanced Specialization for Windows / SQL
Server Migration to Azure

Lead Canadian Partner for Synapse Migration
/ Implementation

Product Team Collaboration for Azure
Synapse / Azure Purview / Azure Databricks



Adastra Azure Specializations

AZURE FOUNDATION

cloud adoption framework, well architected framework, tenant design, resource naming, service tag approach, network architecture, governance design, tco analysis, hybrid network implementation, devops integration, azure foundation implementation, iac automation, ...

AZURE APP / MIGRATION

app / data assessment, app / data decisioning (lift / shift vs modernize), app / data architecture, api architecture, microservices architecture, app/ data security design, migration roadmap, migration execution, iac pipelines, devops integration, ...

AZURE SECURITY

security assessment, identity strategy, role based access, secrets management, encryption, data loss protection, api management, private zone configuration, siem / soar integration, policy enforcement, security implementation ...

AZURE ANALYTICS

analytics assessment, analytics architecture, analytics roadmap, data zoning, enterprise model design (kimball, inmon, data vault), ETL data pipelines, persona enablement, citizen report development, trusted data as a service, ...

AZURE BIG DATA

big data assessment, data lake design, Hadoop integration, PySpark data engineering, ELT pipelines, spark delta lake, spark streaming, serverless compute, devops integration, ...

AZURE AI / ML

advanced analytics assessment, cognitive service integration, r&d model training / testing, mlops implementation, ai / ml pipelines, data science workbench automation, devops integration, ...

POWER PLATFORM

citizen development assessment, power platform governance, roles / responsibilities, environment strategy, CoE kit, canvas / model apps, power automate flows, power automate rpa, power platform dataverse, power bi datasets / reports, ...

AZURE DATA GOVERNANCE

data governance assessment, data catalog, data classification, data sensitivity, data use governance, data privacy, data lineage, master data management, data quality management, reference data management, ...

AZURE INTEGRATION PAAS

integration paas assessment, api management, logic workflows, service bus management, event grid distribution, peer to peer patterns, pubsub patterns, managed file transfers, iot telemetry streaming, iot edge device management, ...



Our Energy Azure Customers





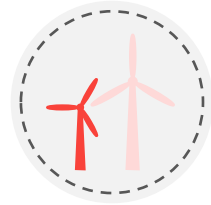
Adastra Energy Approach



Forces Driving Energy Transformation



Serving the new energy consumer



Including more renewables and DERs



Developing new grid operating models



Setting ambitious sustainability goals



New regulations accelerating digital innovation

Operating For The Future

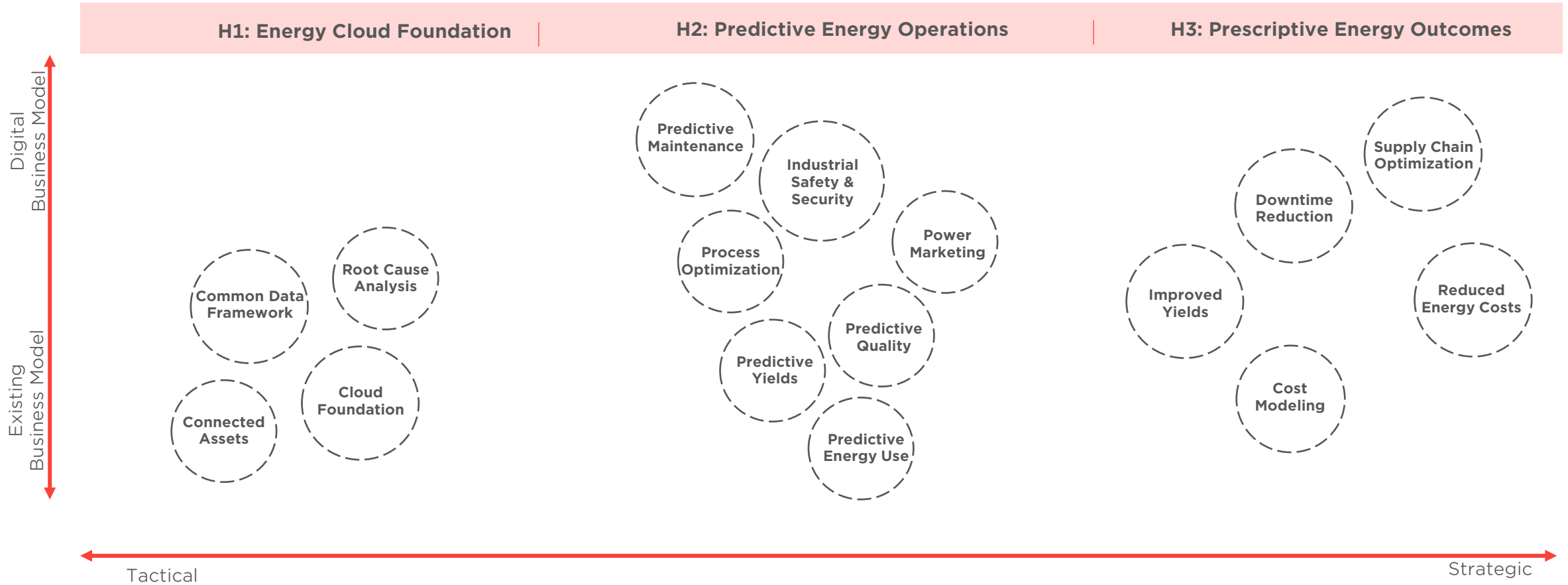
Transition To Clean

Reimagine Energy

Data insights are critical to ensure Energy organizations effectively adapt to these transformative times.

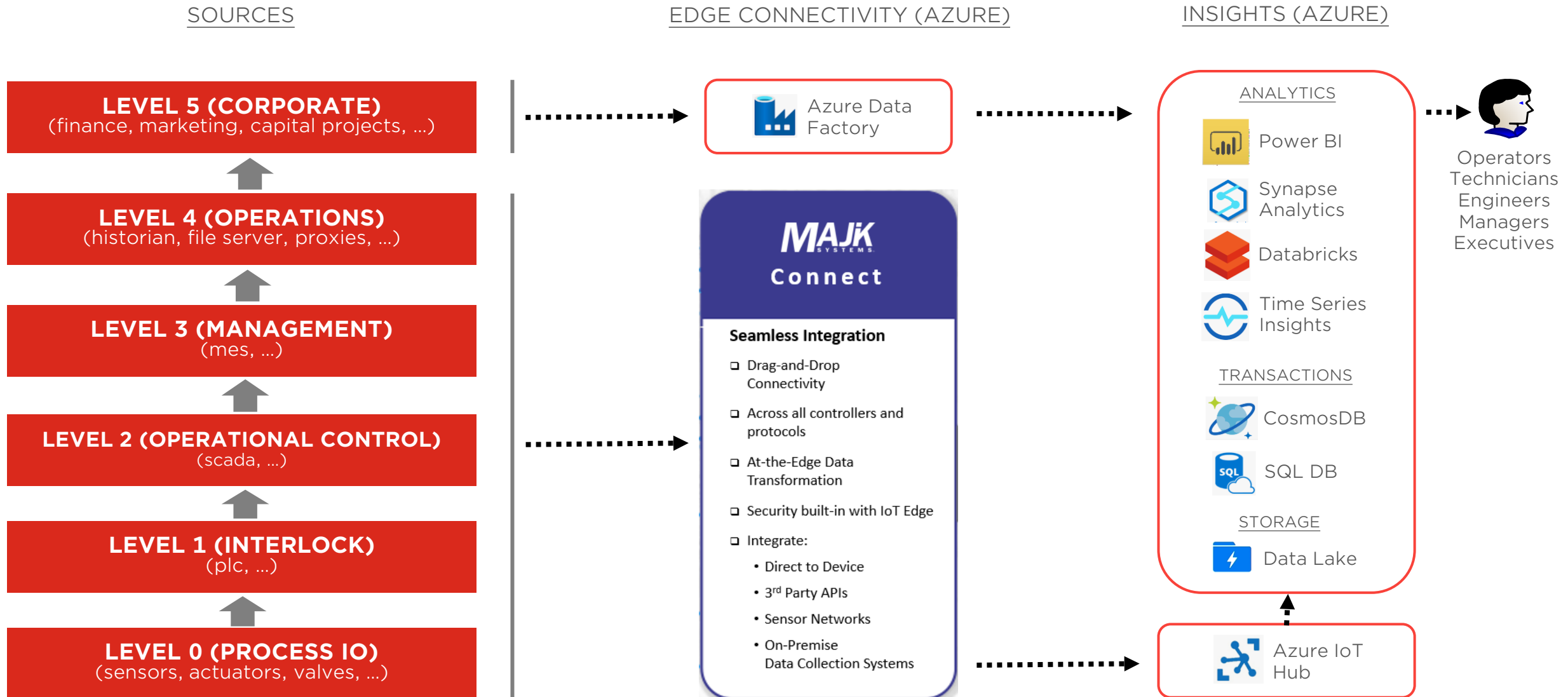


Horizons Of Energy Analytics





Enabling Cloud Connectivity



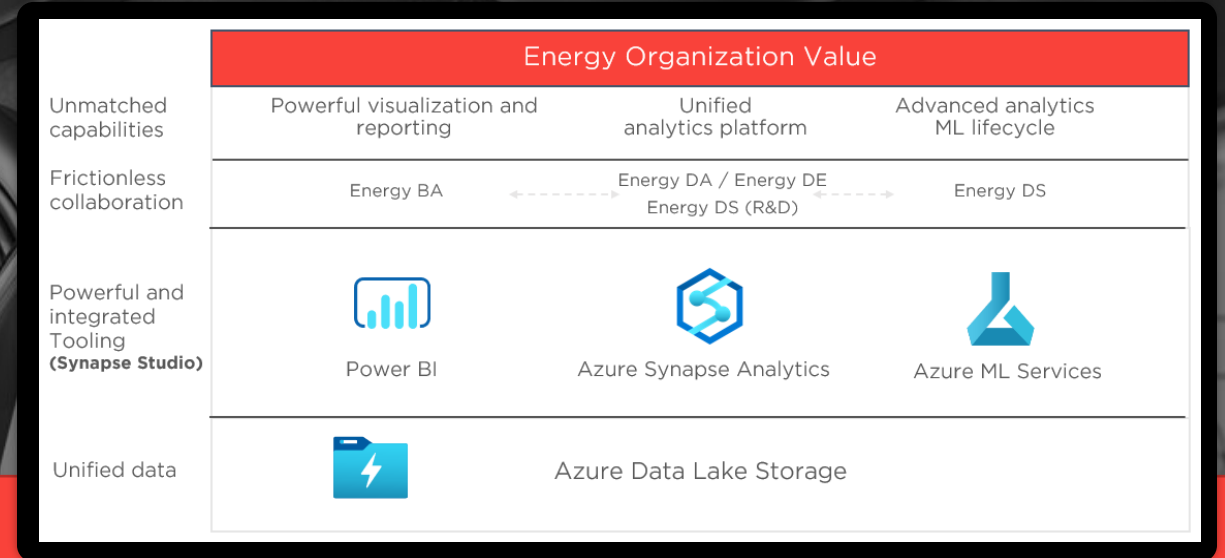
Option: Majik or Native Azure IoT Edge modules.



Adastra Energy Solutions



Analytics Foundation



Horizon 1: Analytics Foundation

Sustainability Benefit: Leverage Azure data center's commitment to green operations.

PROBLEM

Energy organizations need to strategically position the right Azure architecture for current and future analytics use cases, aligned to the unique demands of energy customers.

SOLUTION

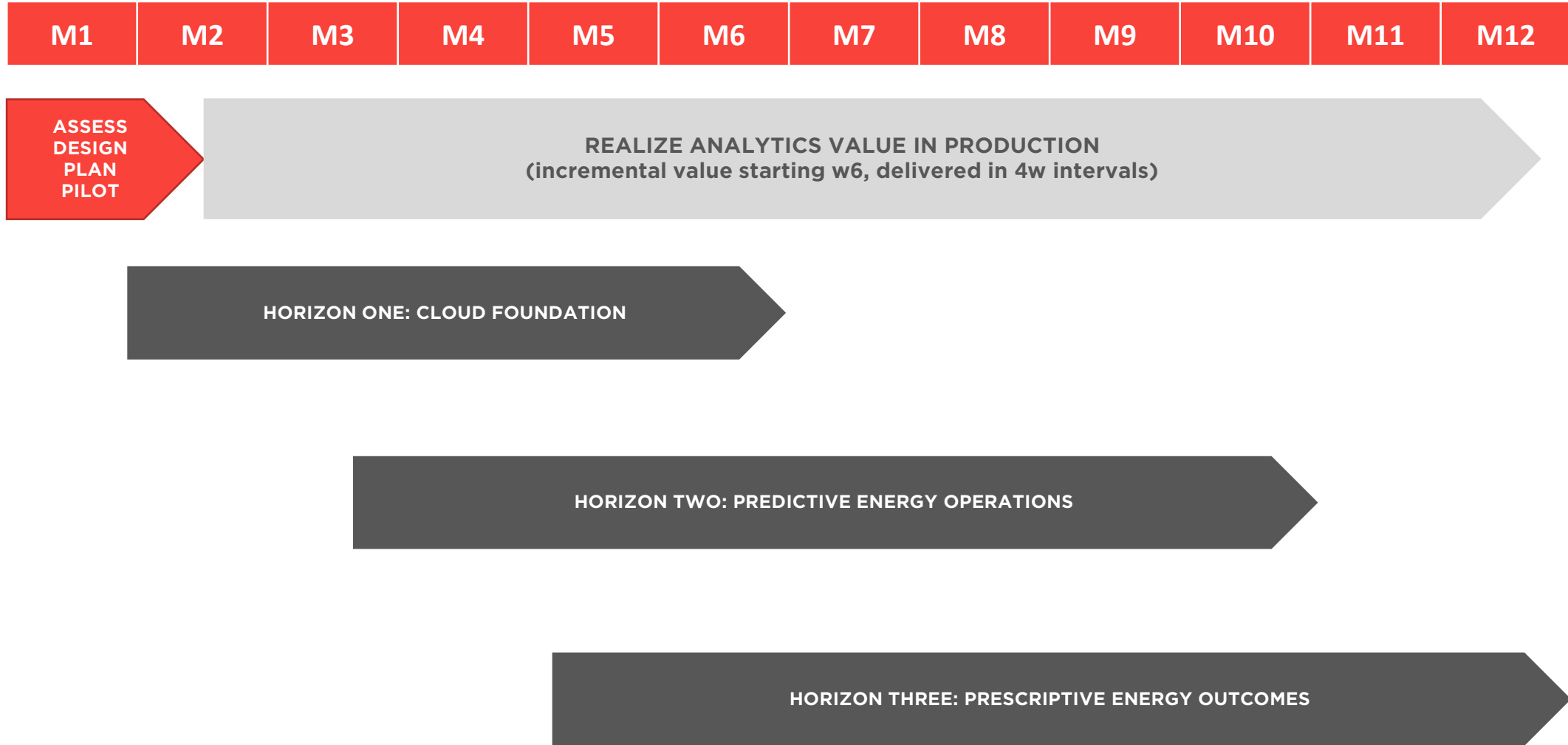
Adastra's assessment will, through discovery, understand current analytic challenges / goals, and will create a prioritized analytic use case inventory. Adastra will then design and roadmap the right Azure analytics platform, reducing technical debt while enabling a lower TCO pay for use model for services.

OUTCOME

The right foundation for Horizon One thru Horizon Three is designed and implemented. Roadmap for energy analytics is defined and started. Use case solutions delivered incrementally in 4w intervals, with the first use case delivered in w6 of the roadmap.

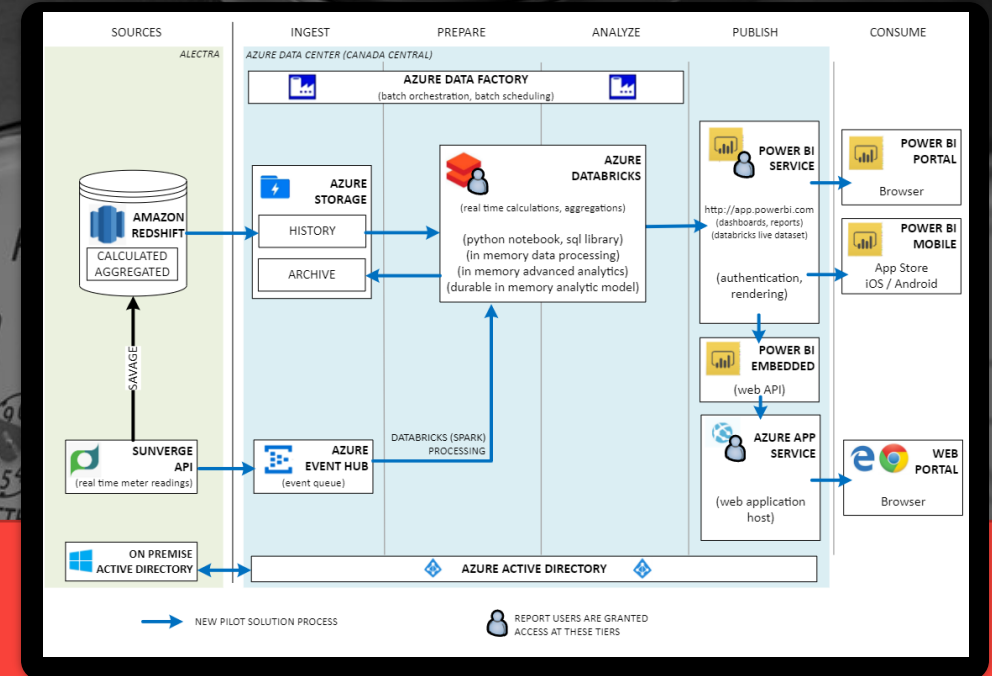


Roadmap To Energy Analytics





Customer Retention



Horizon 1: Customer Retention

Sustainability Benefit: Build customer trust and increase commitment to green energy programs by clearly demonstrating program value.

PROBLEM

To ensure customers appreciate the financial benefits of an innovative energy program (i.e. household solar panels), it's critical they fully understand program cost saving benefits.

SOLUTION

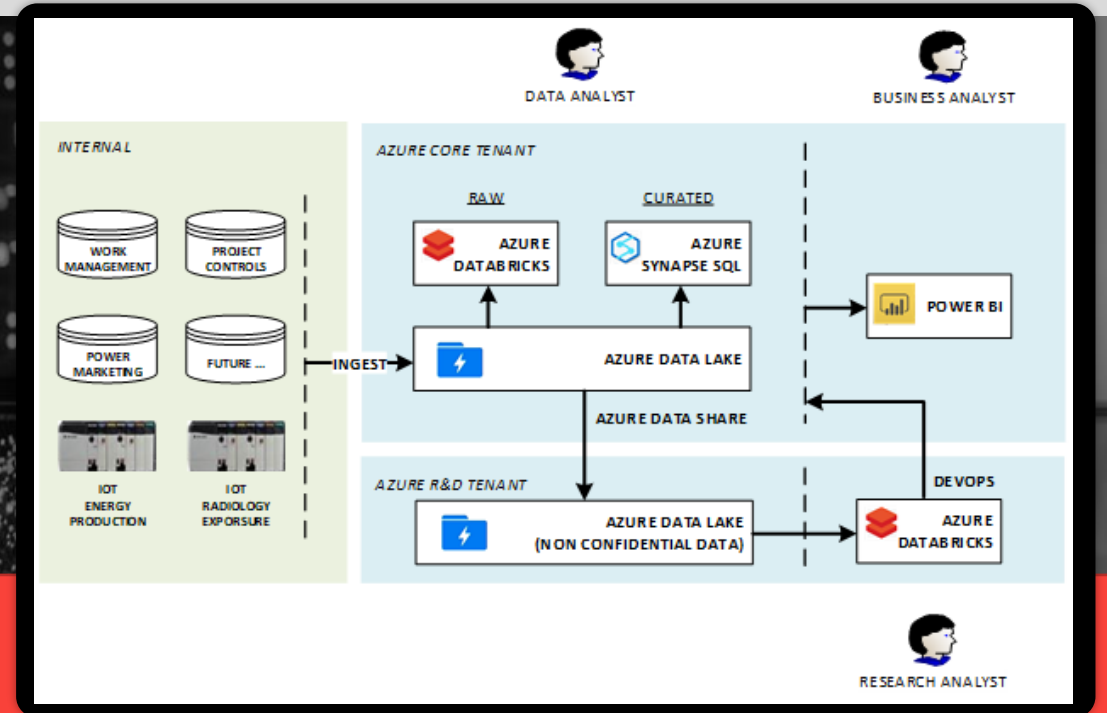
Adastra's solution generates "what if" bills, by collecting real energy use (from smart meters, historians, ...), applying traditional grid rates, incorporating additional traditional costs (i.e. surcharges), and generating what if reports (all thru full automation).

OUTCOME

Customer commitment to innovative energy programs increased. >25% reduction to innovative program attrition rates. Better insights to customer energy use was also realized.



Research Collaboration



Horizon 1: Research Collaboration

Sustainability Benefit: Lower energy infrastructure and waste by optimizing energy yields from existing equipment, and by aligning investments to optimal yields.

PROBLEM

Real time energy production data was not integrated with power sale and capital investment data, to provide optimal energy production models and to enable complete power investment to power sale view.

SOLUTION

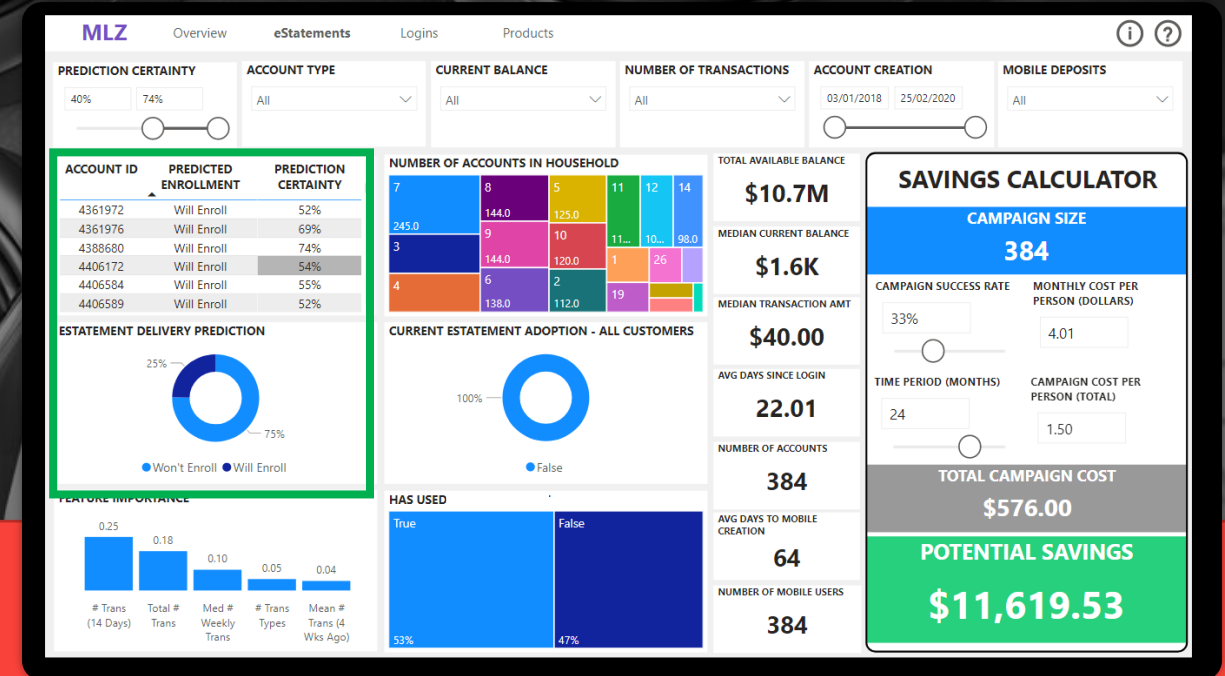
Adastra's solution combined IIoT energy production data in real time, with capital project / power sale data, into a curated zone in Azure, to enable integrated end to end insights. Data was further shared with 3rd party university researchers, who's research models optimize future energy yields.

OUTCOME

Safe, secure collaboration with 3rd party researchers enabled improved energy outcomes. Correlation between investments to production to sale enable proof of value determination and better future investments guidance.



Intelligent Marketing



Horizon 2: Intelligent Marketing

Sustainability Benefit: Improve green energy program adoption by targeting customers likely to enroll. Reduce mass marketing paper costs.

PROBLEM

Limited energy program marketing budgets require customer targeting, to ensure high program adoption rates and reduce total marketing spend by targeting customers likely to enroll in new programs. Customer churn must also be reduced.

SOLUTION

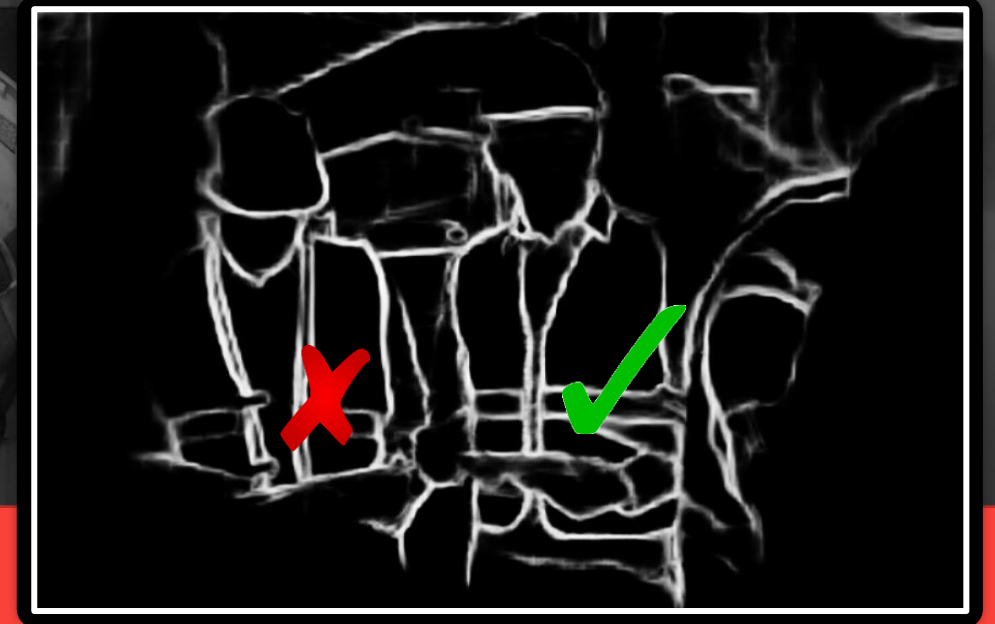
Adastra's solution uses predictive models to identify which customers are likely to enroll in a new energy program or re-enroll in an existing program, by mapping program benefits to customer attributes, and by using data history to train our flexible models. Enables targeted marketing.

OUTCOME

New program adoption rates increase by >50%, while marketing costs reduce. Customer churn reduced by >25%.



Safety Improvement



Horizon 2: Safety Anomaly Detection

Sustainability Benefit: Maintain production efficiency thru safe working environments.

PROBLEM

Without proper use of Personal Protective Equipment (PPE) (such as high visibility safety apparel), there is an increased risk of injury to workers operating in energy production environments

SOLUTION

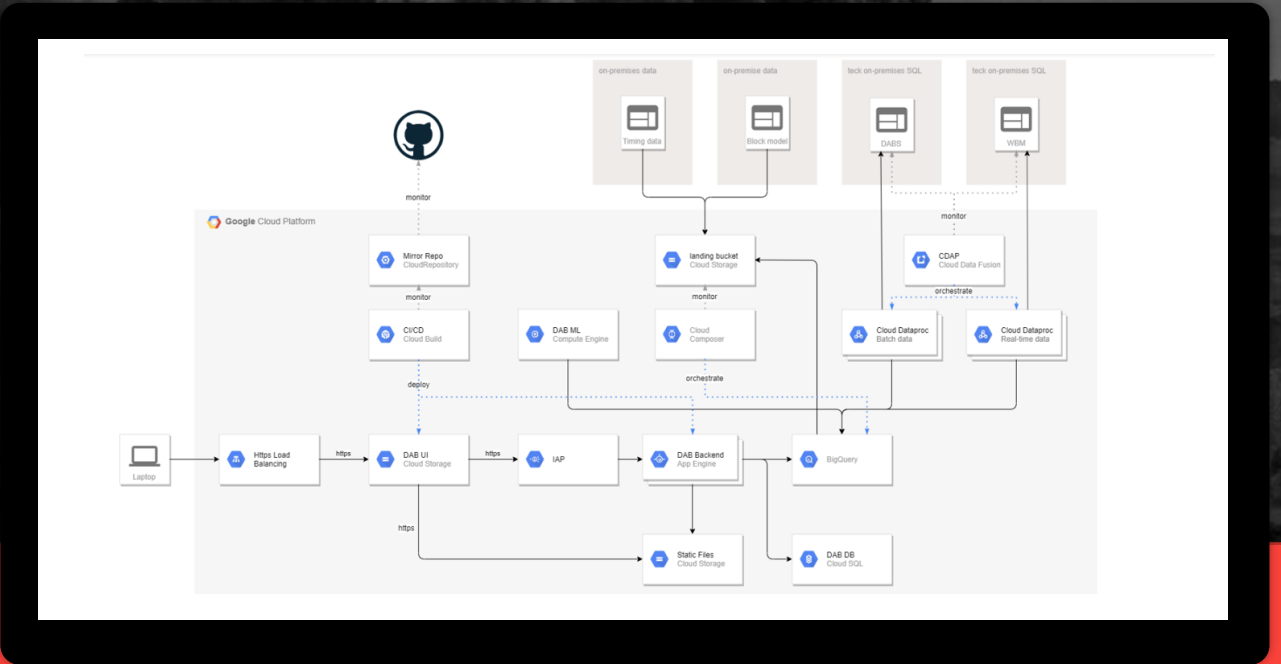
Adastra's computer vision-based detection model, which leverages advanced image processing and object detection techniques to identify correct safety equipment use, catches gaps and identifies risks. Includes a notification system to inform site managers when a safety risk is detected.

RESULTS

Reduced safety risk to mining employees through enhanced monitoring of safety equipment adherence, leveraging video analytics and computer vision capabilities.



Drill Optimization



Horizon 2: Drill Optimization

Sustainability Benefit: Optimize yields thru more efficient use of existing equipment and material.

PROBLEM

Oil & Gas / Mining organizations are continuously improving efficiency and optimizing productivity for their drill and blast activities, but lack the data-driven insights to make optimal drill and blast decisions.

SOLUTION

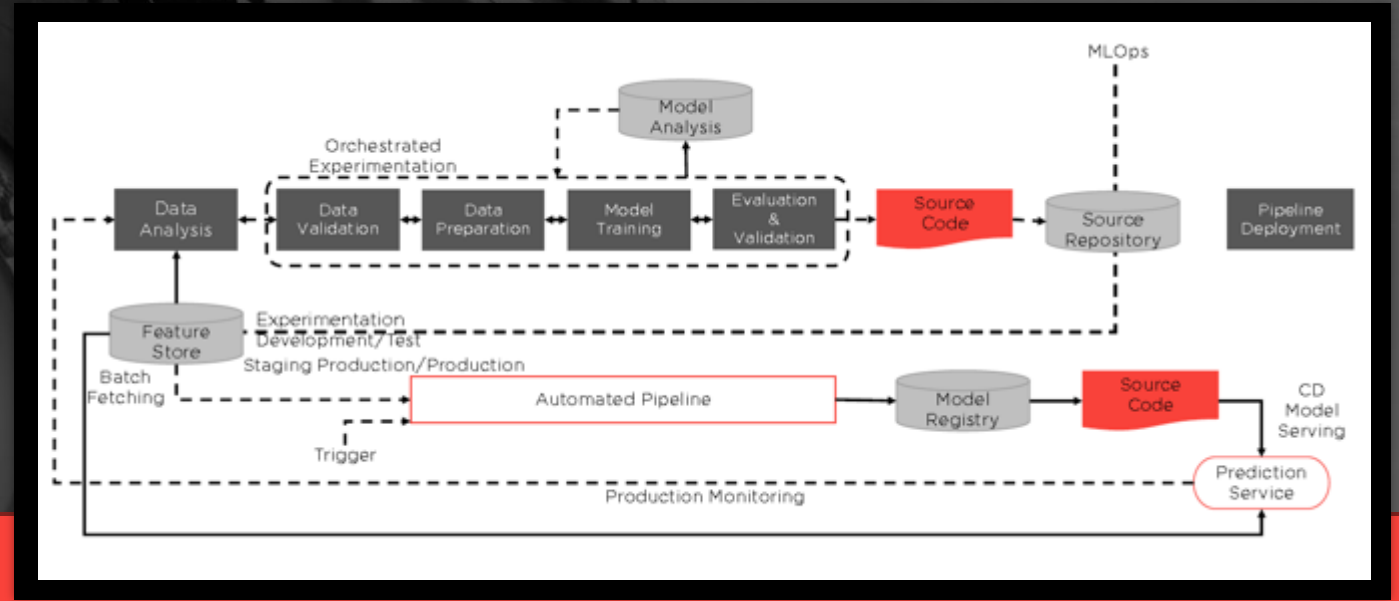
Adastra's advanced analytics drill and blast optimization tool (DABO) predicts optimal drill and blast design to achieve high yields. Our DABO solution leverages historical data, burden spacing, shovel efficiency, blast KPI's, etc., providing recommendations based on real data history.

RESULTS

Drilling and Mining activities optimize yields and reduce costs thru data-driven insights. Our solution includes visualization for drill patterns, KPI reports, blast predictions, recommendations on drilling intensities, and post drill / mine analysis. Customers achieved **>10%** yield improvements on average.



Downtime Reduction



Horizon 3: Downtime Reduction

Sustainability Benefit: Through effective maintenance, improve machine lifespan and avoid machine replacement.

PROBLEM

Unexpected disruptions caused by machine failure have major cost implications to energy production, and impact an energy organization's ability to meet energy production targets.

SOLUTION

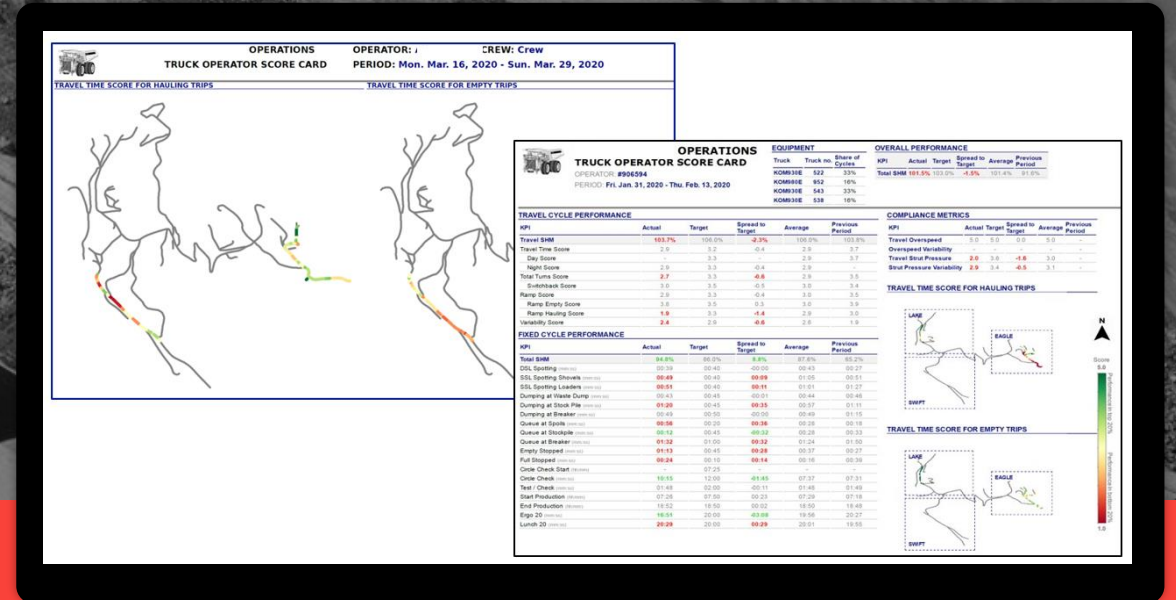
Adastra's solution uses text classification and machine learning methods to analyze historical equipment logs and historical outage history, to identify data patterns leading to maintenance events. Enables real time proactive maintenance results.

OUTCOME

Reduce equipment outages >20%, maintaining production targets and **saving >\$5M per year in averted expenses.**



Asset Optimization



Horizon 3: Asset Optimization

Sustainability Benefit: Achieve more efficient outputs from existing machinery, reducing total equipment impact.

PROBLEM

Equipment is not being used to it's fullest extent at drilling and mine sites, due to lack of visibility of operator performance.

SOLUTION

Collect IoT data in real time, from equipment, to track how it performs, thru a modern data platform in Azure. Compare equipment operator performance against other equipment operators, to determine where additional training can help improve poor operator performance.

RESULTS

Improved equipment operator performance by >5%, optimizing assets more effectively and reducing overall asset costs, **realizing >\$8M / year in value from existing assets.**



Getting Started



15 Day Analytics Assessment

**Kick-Start Your journey To
Energy Analytics With a
Select Adastra Assessment**

Our no commitment offer will accelerate your Azure Analytics & IIOT adoption, and will roadmap future analytics goals, by delivering a tangible design / plan / cost for your future analytic state.

- / Identify future-state Energy Analytic / IIoT goals
- / Assess current Analytic / IIoT environment and IIoT connectively
- / Design / size / cost Azure Analytic / IIoT service design and network design
- / Define security design for Azure Analytic / IIoT environment
- / Define technical governance for Azure IoT / Synapse environment
- / Build migration roadmap / plan



//ADA STRA

For Questions contact:

Hector Osuna

Executive Director

hector.osuna@adastragr.com

305-458-5780

Kevin Harmer

Chief Cloud Officer

kevin.harmer@adastragr.com

647-990-2101